

## REMARKS

The only issues outstanding in the Office Action mailed September 27, 2005, are the rejections under 35 U.S.C §§102 and 103. Reconsideration of these issues, in view of the following discussion, is respectfully requested.

### Rejection Under 35 U.S.C §102

Claims 21, 3 - 10 and 12 - 20 have been rejected under 35 U.S.C §102(e) over Eijsbouts et al. '908. Reconsideration of this rejection is respectfully requested.

Eijsbouts discloses a process for the preparation of a catalyst comprising an alumina carrier, an organic compound comprising at least one covalently bonded nitrogen atom and at least one carbonyl moiety, and Group VI and Group VIII metals. See the sentence bridging columns 2 and 3 of the patent. Patentees teach that it is "essential" that the organic compound comprise at least one carbonyl moiety, directing his comment at formula I at column 4, line 54 of the patent. Thus, it is clear that patentees *require* a compound having at least one carbonyl moiety, and thus do not anticipate the catalysts containing hexamethylenediamine, monoethanolamine, diethanolamine, triethanolamine, N,N-dimethyl-N'-ethylethylene diamine, as in claim 21, or an amino alcohol and an amino alkoxy-silane as in claim 22. Sonnemans et al. does not seem to be relevant in any way to this rejection. Similar arguments pertain to claims 18 and 23. Withdrawal of this rejection is therefore respectfully requested.

### Rejections Under 35 U.S.C §103

Claims 21, 3 - 10 and 12 - 20 have been rejected under 35 U.S.C §103 over Lapidus et al. '574 taken with Allain et al. '443 and Eijsbouts (EP '069). Reconsideration of this rejection is also respectfully requested. Lapidus discloses the process for the preparation of catalysts for carbon monoxide hydrogenation reactions, such as a Fischer-Tropsch reaction. As admitted at page 4 of the Office Action, although Lapidus discloses amines, patentees do not disclose the compounds of the present claims. In order to remedy this deficiency, the Office Action cites Allain, which discloses a copper catalyst, and argues that it would have been obvious to modify the catalyst in Lapidus to use any of the amine compounds disclosed in Allain. Applicants

respectfully disagree with this analysis.

First, Applicants maintain that there is insufficient motivation to combine the disparate teachings of these references. Lapidus pertains to a process for preparing catalysts, preferably Group VIIB or VIII based catalysts, for conducting carbon monoxide hydrogenation reactions, especially Fischer-Tropsch reactions (e.g., column 1, lines 10 - 14) in order to produce hydrocarbon, especially  $C_{5+}$  hydrocarbon. In marked contrast, Allain pertains to copper catalysts, such as a Raney copper catalyst, for hydrolyzing acrylonitrile to acrylamide (e.g., column 1, lines 20 - 24). Applicants respectfully maintain that it would not be rational for one of skill in the art to combine the teachings of a catalyst for hydrolyzing acrylonitrile to acrylamide with a catalyst for conducting carbon monoxide hydrogenation reactions. The catalyst of Allain is a copper/aluminum catalyst. In marked contrast, the catalysts of Lapidus contain a metal or metals, suitably a group IIIB, IVB, VB, VIB, VIIB or VIII metal (e.g., column 4, lines 10 - 18). There is no teaching evident from the record that it would be obvious in Lapidus to include copper (Group IB metal) or aluminum (Group IIIa metal) in its catalyst, and thus no reason to combine any teachings of the secondary references, all of which are specific to a catalyst having specific active metals.

What is more, the copper/aluminum catalysts of Allain are contacted with a solution having a weakly basic character comprising an ammonium hydroxide, certain amines, certain quaternary ammonium hydroxides, alkali metal carbonate, or water (e.g., column 6, lines 31 - 35). These compounds used to make the contacting solution are disclosed at column 9 - 10, and include a vast array of compounds. The compounds disclosed at columns 9 - 10 do include diethanolamine and N-N' dimethyl ethylene diamine. However, Allain further discloses that an optional additive may be included in the second contacting solution. These additives are disclosed in column 11, and include EDTA. The action alleges that the compounds disclosed at column 11 are equivalent to the compounds disclosed at columns 9 - 10. However, Allain teaches that the compounds at column 11 are merely an optional additive, and are not "equivalent" to the compounds at columns 9 - 10.

Furthermore, Lapidus requires that its catalysts be activated by contact with a chelating compound (e.g., column 5, lines 4 - 6). There is no teaching or suggestion in Allain that the compounds disclosed at columns 9 - 10, particularly, diethanolamine or N-N' dimethyl ethylene diamine, would act as a chelating agent, and be suitable in the process of Lapidus. Consequently, Applicants respectfully submit that there is clearly insufficient motivation to combine these

references. The stubborn fact remains that the references are pertaining to completely different catalysts and completely different chemical reactions for which the catalysts are employed.


At pages 5 and 6 of the Office Action, it is argued that motivation for the combination of the references is provided from the alleged equivalents of EDTA and MEA as chelating agents, Applicants acknowledge that substitution is not the metals of the catalyst but the specific chelating agents. However, particularly in view of the fact that catalysts are accepted to be an unpredictable art, see *In re Doumani*, 281 F2d. 215, 126 U.S.P.Q. 408 (CCPA 1960), there is no expectation on the part of one of ordinary skill in the art that a chelating moiety employed with a catalyst in which the active metal is copper, as in hydrolyzing acrylonitrile to acrylamide, would be equivalent, much less able to function without destroying the catalytic activity, of a catalyst containing group VIIb or VIII metals used for carbon monoxide hydrogenation.

Moreover, as admitted in the Office Action, neither Lapidus nor Allain disclose sulfidation of the catalyst composition. Eijsbouts is cited in order to provide such a teaching, but Eijsbouts teaches that it is essential that the organic compound employed in the catalyst contain at least one carbonyl moiety, and preferably at least two carbonyl moieties. See column 4, lines 65 - 67. One of ordinary skill in the art, accordingly, would have no motivation to transfer the sulfidation treatment of this highly different catalyst to either of the catalysts of Lapidus or Allain. Accordingly, it is maintained that the combination of references fails to suggest the present claims, and withdrawal of the rejection is respectfully requested.

The claims of the application are submitted to be in condition for allowance. However, if the Examiner has any questions or comments, she is cordially invited to telephone the undersigned at the number below.

The Commissioner is hereby authorized to charge the necessary 1-month extension fee and any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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